

REMARKS

The Office Action of August 11, 2006, has been received and carefully reviewed.

Claims 1-17 have been considered and stand rejected.

A new claim 18 has been added. Accordingly, claims 1-18 are now pending in the application.

Reconsideration of the above-referenced application is respectfully requested.

Rejections under 35 U.S.C. § 112, First Paragraph

Claim 1 stands rejected under 35 U.S.C. § 112, first paragraph, for reciting subject matter that purportedly lacks an adequate written description in the specification of the above-referenced application.

The Office Action indicates, while referencing FIG. 9, that “a ‘heat sink element comprising a unitized structure’ is not supported by the original specification because the heat sink element described in the specification comprises a plurality of layer [sic].” It is respectfully submitted that the unitized structure is supported by the as-filed specification, as a unitized structure may include one layer or by a process in which a plurality of layers are made into a single unit. A nonlimiting example of such a process is provided at paragraphs [0075]-[0087] of the as-filed specification.

In any event, the rejection is obviated by the amendment to independent claim 1, in which the term “unitized” is replaced with “unitary.” The amendment to independent claim 1 reclaims the unitary structure as previously presented and understood by the Examiner, as indicated in prior Office Actions.

In view of the foregoing, it is respectfully submitted that independent claim 1 complies with the written description requirement of 35 U.S.C. § 112, first paragraph. Accordingly, withdrawal of the 35 U.S.C. § 112, first paragraph, rejection of independent claim 1 is respectfully requested.

Rejections under 35 U.S.C. § 102

Claims 1-4, 6, 9, and 11-17 have been rejected under 35 U.S.C. § 102(e) for being drawn to subject matter that is allegedly anticipated by the subject matter described in U.S. Patent 6,019,165 to Batchelder (hereinafter “Batchelder”).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Batchelder describes a heat exchange apparatus with a heat source (e.g., a semiconductor device), a thermal conductor and electrical insulator 14 that conducts heat from the heat source, and an active spreader plate 20 that receives heat from the thermal conductor and electrical insulator 14. Col. 4, lines 63-67; col. 6, lines 2-11; FIGs. 2-3. The active spreader plate 20 includes flow channels 50 and 64 located inside the active spreader plate 20 that facilitate the transfer of heat. Col. 5, lines 1-7; FIG. 2; col. 6, lines 2-11; FIGs. 2-3. It is apparent that the configurations of the interior channels or passageways 50 and 64 require that *at least two patterned objects be assembled* and hermetically sealed, ultrasonically welded or bonded by adhesives to be enclosed. Col. 4, line 9-19. An embodiment of the active spreader plate 20 with more than two patterned objects is shown in FIG. 7 of Batchelder. Col. 6, lines 23-67; col. 8, lines 1-12; FIG. 7. As an example, the active spreader sheet includes at least a medial sheet 206, an upper stamped plate 208, a channel forming sheet 210, a top sheet 212 in order to enclose and form portions of the channels 220, 222, 224, 226. Col. 7, lines 23-42; FIG. 7. Further, the channels 50, 60, 220, 222, 224, 226 are all rectilinear segments or linear segments, each segment is fluidly connected together at substantially discrete or right angles. *see*, FIGs 2-5, 7-8.

It is respectfully submitted that there are several reasons why the Batchelder reference fails to expressly or inherently describe the elements required by each of claims 1-4, 6, 9, and 11-17.

Independent claim 1, as amended and presented herein, requires a heat transfer element comprising a unitary structure. In the Office Action, it is suggested that the active spreader

plate 20 includes a unitized structure. Office Action, page 3. While independent claim 1 does not require a unitized structure, it is agreed that “Batchelder does not teach that the heat transfer element is fabricated as a unitary structure.” Final Office Action of March 28, 2006. Accordingly, Batchelder does not anticipate at least this element of amended independent claim 1.

Moreover, the Office has failed to show that Batchelder expressly or inherently describe a heat transfer element comprising a unitary structure, as required by amended independent claim 1. Furthermore, in *Howard v. Detroit Stove Works*, 150 U.S. 164 (1983) the Supreme Court held, “it involves no invention, *i.e.*, *it would have been obvious*, to cast in one piece an article which has formerly been cast in two pieces and put together.” (Emphasis supplied). However, the Office has not shown that the heat transfer element comprising a unitary structure as required by amended independent claim 1 is in the prior art with one piece or two or more assembled pieces. And, even if it can be shown to be in the prior art as two or more pieces, the Office Action has failed to show that the Batchelder reference teaches or suggests how the heat transfer element of amended independent claim 1 could be made into a unitary structure from two pieces.

Also, amended independent claim 1 requires a heat transfer element comprising one or more passageways extending within the unitary or monolithic structure. As the passageways of Batchelder do not extend **within** a unitary structure, Batchelder does not anticipate each and every element of amended independent claim 1. Moreover, if “Batchelder does not teach that the heat transfer element is fabricated as a unitary structure,” then it is axiomatic that Batchelder cannot anticipate one or more passageways extending **within** the unitary structure, as recited in amended independent claim 1.

Moreover, amended independent claim 1 requires at least one passageway that includes an internal portion extending along a nonlinear path. As the passageways 50 and 60 of Batchelder include linear portions, *i.e.*, channels, and the linear portions are connected together rectilinearly, as shown in FIG. 3, Batchelder does not expressly or inherently describe a passageway that includes an internal portion extending along a nonlinear path, as required by amended independent claim 1.

Therefore, it is respectfully submitted that, under 35 U.S.C. § 102(e), the subject matter recited in amended independent claim 1 is allowable over the subject matter described in Batchelder.

Each of claims 2-4, 6, 9, and 11-17 is allowable, among other reasons, for depending either directly or indirectly from claim 1, which is allowable.

Claim 2 is further allowable since Batchelder neither expressly nor inherently describes at least a portion of a heat transfer element that has been fabricated as a unitary structure may include a plurality of adjacent, mutually adhered regions.

Claim 6 is additionally allowable because Batchelder neither expressly nor inherently describes a heat transfer element that is fabricated as a unitary structure with particles that are secured to one another.

Claim 16, which depends from claim 2, is also allowable since Batchelder neither expressly nor inherently describes at least a portion of a heat transfer element that has been fabricated as a unitary structure may include a plurality of superimposed, contiguous, mutually adhered layers.

Claim 9, which depends from claim 16, is further allowable because Batchelder neither expressly nor inherently describes at least a portion of a heat transfer element that has been fabricated as a unitary structure from a plurality of sheets of thermally conductive material.

Claim 11, which depends from claim 9, is also allowable since Batchelder neither expressly or inherently describes at least a portion of a heat transfer element that has been fabricated as a unitary structure may include a plurality of sheets that are thermally bonded together.

Claim 12 is additionally allowable because Batchelder neither expressly nor inherently describes a heat transfer element with a nonlinear passageway that is configured to permit airflow therethrough. Instead, the teachings of Batchelder are limited to sealing a “heat transfer fluid” within flow channels 50 and 60.

Claim 14 is additionally allowable since Batchelder lacks any express or inherent description of a heat dissipation element (e.g., fins 28) that includes a plurality of adjacent, mutually adhered regions comprising thermally conductive material. *See col. 7, lines 4-22.*

Claim 17, which depends from claim 14, is further allowable because Batchelder neither expressly nor inherently describes a heat dissipation element that includes a plurality of superimposed, contiguous, mutually adhered layers. *See* col. 7, lines 4-22.

Withdrawal of the 35 U.S.C. § 102(e) rejections of claims 1-4, 6, 9, and 11-17 is respectfully solicited, as is the allowance of each of these claims.

Rejections under 35 U.S.C. § 103(a)

Claims 5, 7, 8, and 10 have been rejected under 35 U.S.C. §103 (a).

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Batchelder in View of Tseng

Claim 5 stands rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over that taught in U.S. Patent 6,019,165 to Batchelder (hereinafter "Batchelder"), in view of teachings from U.S. Patent 6,175,497 to Tseng et al. (hereinafter "Tseng").

Claim 5 is allowable, among other reasons, for depending from claim 1, which is allowable.

Batchelder in View of Rostoker et al.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over that taught in Batchelder, in view of teachings from U.S. Patent 5,814,536 to Rostoker et al. (hereinafter “Rostoker”).

Claims 7 and 8 are allowable, among other reasons, for depending from claim 1, which is allowable.

Batchelder in View of Fuller, Jr. et al.

Claim 10 stands rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over that taught in Batchelder, in view of teachings from U.S. Patent 6,529,379 (incorrectly cited in the Detailed Action as 5,529,379) to Fuller, Jr. et al. (hereinafter “Fuller”).

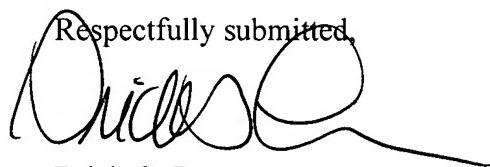
Claim 10 is allowable, among other reasons, for depending from claim 1, which is allowable.

It is respectfully requested that the 35 U.S.C. § 103(a) rejections of claims 5, 7, 8 and 10 be withdrawn and that each of these claims be allowed.

CONCLUSION

It is respectfully submitted that each of claims 1-18 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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Date: November 13, 2006

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